

PATENT SPECIFICATION

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(54) METHOD AND APPARATUS FOR ACCEPTING, VALIDATING AND RECORDING BETTING INFORMATION ON SLIPS FILLED OUT BY THE BETTOR

- (71) I, STEPHEN ROBERT KRAUSE, a citizen of the United States of America, of 3607 Anton Farms Road, Baltimore, Maryland 21208, United States of America, do hereby declare the invention for which I pray that a Patent may be granted to me, and the method by which it is to be performed to be particularly described in and by the following statement:—
- 10 The invention relates to an apparatus and method for accepting, validating and recording betting information contained on mark-sense betting slips filled out by the bettor. The system is designed to accept
- 15 lottery numbers tickets, sports wagering tickets and other games that can be placed on for example a standard 12 column wide and 80 column long tab type card or slip.
- 20 Many countries throughout the world operate government sponsored number games, lotto games and sports event wagering pools. Betting slips for these games are available to the public and are filled out by marking designated parts of the betting
- 25 slip. The completed betting slip is brought to an agent or other designated location where the slip is validated on a manual basis. The customer then pays for the bets made and is given a receipt by the agent.
- 30 The agent in turn, brings all the accumulated betting slips to a central bank or other clearing house once a week or at other designated intervals and settles his cash account.
- 35 This method of handling betting slips is time consuming, error prone and costly due to the number of times the betting slip must be handled and calculated.

- 40 It is an object of the present invention to obviate or mitigate the above problems. According to the present invention there is provided apparatus for accepting, validating and recording betting information entered onto betting slips by bettors, wherein
- 45 each slip comprises information identifying

any one of a plurality of games and means for allowing a bettor to enter betting information relating to that one game, the apparatus comprising a micro-computer having program storage storing programs relating to each of the plurality of games, an optical reader for reading out game identifying and betting information from a betting slip, means controlled by the micro-computer for transferring read out information into a memory, means for checking that the read out information is valid and for rejecting slips from which invalid information has been read, means for initiating the program relating to the game identified by the read out game identifying information, a display device for displaying information related to the read out betting information, a calendar clock device for supplying time information, a tape cassette transport device for recording time information and information relating to accepted bets on tape, a printer controlled by the micro-computer for printing out tape recorded information relating to accepted bets, and a manually operable keyboard for exerting overall control of the apparatus.

The invention also provides a method for accepting, validating and recording betting information entered onto betting slips by bettors, wherein each slip comprises information identifying any one of a plurality of games and means for allowing a bettor to enter betting information relating to that one game, the method comprising storing programs relating to each of the plurality of games in a micro-computer reading out game identifying information and betting information from a betting slip with an optical reader, transferring read out information into a memory under the control of the micro-computer, checking that the read out information is valid and rejecting slips from which invalid information has been read, initiating the program relating

to the game identified by the read out game identifying information, displaying information related to the read out betting information, supplying time information from a clock device, recording time information relating to accepted bets on a cassette tape, printing out tape recorded information related to accepted bets under the control of the micro-computer, overall control of the method being effected from a manually operable keyboard.

The invention makes it possible to accept, validate and record betting information relating to a variety of betting games. Two examples of types of games which can be dealt with are defined below. The Lottery Esportiva game is a sports pool wagering game in which the bettor must pick the results of 13 football-type games that will be held during the course of one week. The rules of the game provide that the bettor select results for all 13 games. In addition, the bettor may make double or triple bets for a given game up to a prescribed limit. In effect, the bettor has 7 possible combinations for each game, i.e. He may select:

1. team 1, 2. team 2, 3. a tie, 4. team 1 and a tie for a double, 5. team 2 and a tie, 6. team 1 and team 2, or 7. team 1, team 2 and a tie for a triple.

The rules of this game require that the bettor make a minimum of 12 single bets and one double bet for a minimum price of three crusaros. Additional double and triple bets can be made up to a maximum of 162,00 crusaros. The bets are calculated by exponentiating 2 to the number of doubles selected times 3 exponentiated to the number of triples selected and multiplying that figure times 1,50 crusaros to give the total due. This game is laid out on a 12 by 35 line matrix form.

The second example is the Boloteca game which for a set 10,00 crusaros bet permits the player to select 6 teams in the order 1 through 6 that he thinks will wind up as the top 6 teams, in order, during the season. The back of the slip lists 54 teams from which the bettor makes 6 selections and marks these selections by darkening the appropriate segment of the form corresponding to the selected team. This card is also laid out on a 12 by 35 line matrix form.

The optical reader may use infra-red light sources and photo-transistors to sense the presence of information on a card. The wavelength of the light emitted is preferably not in the visible spectrum. The reader senses light transmitted through the card. A heavy, dark mark made by a soft graphite pencil will attenuate the light. If no mark or hole is encountered, a data latch is not set. The back of the betting

slip contains 35 strobe marks. The latched data is not cleared until a strobe occurs. The strobe which follows the data does two things: it signals that data is stable and is ready to be read and it clears the data latches. On the back of the card on the left side is the card sense channel that consists of an unbroken black line running down the side of the card. The card sense channel detects if a card is present and controls the readers transport motor.

All text printed on the card is in red ink that cannot be picked up by the readers photodiodes. The optical reader reads one line at a time of data and transfers this data to the micro-computer and into a RAM (random access memory) memory matrix.

The micro-computer may be based on an 8080 chip and associated memory and digital logic. In operation, a bettor fills in his betting slip and presents it to the agent who in turn feeds the slip into the mark-sense reader. Data identifying the type of game and the bets are fed from the reader through the micro-computer and into a matrix memory that is controlled by the computer program. The memory matrix is dimensioned to configure with each field on the 12 by 35 line slip. A mark on any segment of the slip will cause a "1" to appear in the associated memory matrix.

Associated with each game or slip form is a ROM (read only memory) containing the program associated with that game. The slip is encoded with one black line imprinted on data line 7 of the Boloteca game and another at line 25. The Esportiva Pool slip is encoded with a black line at data line 20.

After the betting slip is read, the data is loaded into the 12 by 35 data matrix located in the micro computer systems RAM in which 420 bits of this matrix correspond to the 420 possible data locations on each of the game slips. A mark made on the betting slip will cause a binary "1" to appear in the associated RAM matrix. No mark or a blank on the betting slip will cause a binary "0" to appear in the RAM. The RAM is then accessed by the CPU (central processing unit) under program control to determine which game slip has been read. If the bet slip does not correspond to a valid game, the program causes an error message to be the output to the Display indicating an invalid betting slip. If the slip is valid, the main program branches to the program ROM associated with the particular game. The CPU under program control checks all bets and calculates the amount of money owed by accessing data from the RAM's 12 by 35 matrix representing bets or marks made on the ticket and read by the optical reader.

If less than the required number of bets are made, more than the required number of bets are made, or if the slip has been improperly marked the program sub-routine causes the appropriate error message to be the output to the Display.

If all bets are valid, the total amount owed is the output to the display and the program stops.

Upon payment of the amount due for the wagers made, the agent presses the "accept" key on his keyboard and the bet is recorded onto a data file on the tape cassette transport. The data file will contain digital information converted from the 12 by 35 RAM matrix, representing bets made on the betting slip. The file contains 45 bytes of data listed as follows:

File No.
Receipt Serial No.
Date and time of transaction
13 digits of code representing the bets made (12 digits for the Bolotecn)
Amount wagered
Machine No.

At the time the bet is accepted by the agent and his accept key is pressed, the CPU, under program control, interrogates the calendar/clock through the I/O peripheral interface and stores the data representing month, day, hour and minute. This data is then transferred to the tape file. After the bet is recorded, the program directs the CPU to print out a receipt of the transaction using the format contained in the program ROM, representing the type of transaction or betting slip used. This receipt contains information relating to the bet's placed, the amount of the bet's, the serial number of the ticket, the date and time of the transaction, and the file on which the bet was recorded. The ACU (arithmetic logic unit) of the CPU generates a sequential serial number for both the tape file and the ticket serial number by incrementing 1 to each storage register, after each transaction. The ACU also calculates the price of the bets and keeps a running total of each type of betting transaction and a cash total for each game. The agent presses his total key to obtain a visual and printed readout of each game's total for either cash or number of transactions. At the end of the betting period, the agent removes the tape cassette for pick up and processing at a central computing area. An alternate feature of the micro-computer will permit the agent to transmit the entire contents of the tape cassette to the central computer over a standard voice grade dial-up telephone line using the I/O communications interface. This is a Universal Synchronous/Asynchronous Receiver/Transmitter (USART) chip designed for data

communications in micro-computer systems. The USART is used as a peripheral device and is programmed by the CPU to operate using virtually any serial data transmission technique presently in use. The USART accepts data characters from the CPU in parallel format and then converts them into a continuous serial data stream for transmission.

As new games and betting schemes, such as numbers type lotteries and Lotto games are developed, the programming necessary for reading, recording and validating these new games and associated betting slips can be added in the form of a pre-programmed plug-in ROM to the already existing universal mark-sense betting terminal. These additional ROM's will contain all the necessary sub-programming to direct the operation of the peripheral I/O units and CPU.

The invention will be better understood from a reading of the following detailed description of an example thereof with reference to the accompanying drawings wherein:

Fig. 1 is a block diagram of the basic components of the apparatus;

Fig. 1A is a view in perspective of a housing for the apparatus;

Fig. 2 is a data flow sheet showing the components of Fig. 1 interfaced with micro-computer chips including additional memory;

Fig. 3 shows the agent's keyboard with process steps for use of the keys;

Fig. 4 shows the pertinent portions of a Bolotecn betting slip with timing marks from the reverse side shown to the right;

Fig. 5 shows the initial common portion of sequence of operation for the games;

Fig. 6 shows the sequence for the Bolotecn game;

Fig. 7 shows the terminating portion of the sequence for both games;

Fig. 8 depicts the data stored for the file of betting slip of Fig. 4, as printed on a better receipt;

Fig. 9 illustrates a portion of the Esportiva ticket;

Fig. 10 shows the sequence for the Esportiva ticket;

Fig. 11 shows the data stored in the file for the Esportiva ticket of Fig. 9, as printed on a better receipt;

Fig. 12 illustrates a journal print out of transactions; and

Fig. 13 shows a print out of grand totals.

In Fig. 1 there is shown a block diagram for illustrating the principles involved in the described example of the present invention. A central processing unit (CPU) or micro-computer 11 is shown in association with several pieces of peripheral equipment. Optical mark-sense reader 13 reads

the betting slips or cards and provides the information to micro-computer 11. Calendar clock 15 supplies the exact month, day, hour and minute of each transaction.

- 5 The display 17, is provided to transmit error messages and to show the amount wagered and grand totals.

The printer unit 21, provides the receipts, journal entries and grand totals.

- 10 Tape cassette transport 19, receives the betting slip information and records it sequentially in the files, with one file per slip up to 5,000 files. It is designed to read back to the micro-computer 11, for journal

- 15 entries.
- The acoustical coupler and modem 23, interconnects the micro-computer 11, over telephone line 25, to the remote central computer (not shown) for supplying all information thereto.

- 20 The agent's keyboard 27, is provided to permit him to exert certain controls over the process. It comprises six keys with six separate functions discussed in connection with Fig. 3.

- 25 In Fig. 1A, there is shown a view in perspective of an apparatus in accordance with this invention. A housing 31, includes the electronics with the exception of the optical mark-sense reader 13, which is inter-connected with housing 31, via cable 33. A ticket or betting slip 35, is shown being placed into the reader for scanning.

- 30 Housing 31, includes the six agents keys or keyboard 27, the printer 21, the calendar clock 15, and the display 17, visible from the exterior. Also a cassette 19, is shown in place for receiving or transmitting information.

- 40 In Fig. 2, the details of the micro-computer 11, are shown. It comprises all of the drawing with the exception of the peripheral units already discussed in connection with Fig. 1.

- 45 The central processing unit is shown at 40 as being a micro-processor chip of the 8080 type. The remaining components are separate chips and are connected to the CPU 40 by way of data bus 41 (8 wires ie 8 bits), control bus 43 (6 bits data), and address bus 45 (16 bit data).

- 50 A clock generator and driver 47, provides the clock signals to CPU 40 at inputs for reset (clear progressive counter, start at location 0 in memory), phase 1, phase 2 (two externally supplied clock phases), RDY (valid data available on 8080 bus), and the CPU unit 40 addresses the clock

- 47 over a SYNC lead.
- 60 The in-out control for CPU 40 is a system controller chip 51, of the 8228 type. The WR lead for write is used for the memory write or input-output control. The DO-D7 (8 bit) bus is for bi-directional data transfer. The DBIN is the data bus control

and the HLDA is the hold acknowledge. STSTB defines status between clock 47 and controller 51.

The CPU unit receives and transfers information to the remaining chips in Fig. 2, 70 over the AO-A15 address bus. This provides the address to memory up to 64,000 eight bit words or denotes the input-output device number for up to 256 input and 256 output devices. AO is the least significant 75 address bit.

The micro-computer 11 is provided with three ROM memories all 8316 chips. The first ROM memory 60, stores the main program. The second ROM memory 61, 80 stores the program for the Boloteca game and the third ROM memory 62, stores the program for the Esportiva game. Further ROMs may be incorporated to add additional games to the present system.

Two RAM or random access memories are shown, each of 8101 type chips. One of these RAMs, for example 64, may include the matrix which is twelve by 35, and the other RAM 65, is provided for secondary 85 data storage.

Each of the peripherals is interfaced with the micro-computer 11, over peripheral interface chips 70-76, with the later 6 chips being of type 8255 and communication interface chip 70 being type 8251. 95

BOLOTECA GAME

In Fig. 4, the pertinent portions of the bettor slip or card are shown to describe the principles employed. On the reverse side of the ticket, indicated by the strip 80, there are shown 35 timing marks called strobe marks 81. It is the information between these marks which is read. The data field 83, is found between identification bars 85 and 87. Bars 85 and 87 correspond to field lines 7 and 25 which identify the Boloteca game with data information there-between. 100

This ticket is marked by the bettor, such that team 10 should come up first (1), team 12 second (2), team 33 third (3), and so forth in the sequence of six teams essential to pick. 105

This data information is read into RAM 64 (Fig. 2) under program control by micro-computer 11, using CPU 40. The capacity of this RAM exceeds 35 lines by 12 fields which covers the largest data matrix of 12 by 35. While the information in field 83, of the Boloteca slip is only 14 lines by 12 fields, other games require more data. 120

Referring now, to Fig. 5, the sequence of operation for playing either of the games 125 is shown as starting at START 101. Betting slip 35 (of either Boloteca or Esportiva type) is inserted into reader 13 which is shown as block step 102. Micro-computer 11, under program control, reads this slip 130

as step 103, by virtue of control over
 render 13, from micro-computer 11. Data
 flows from optical mark-sense reader 13
 through line 104 (Fig. 2) into peripheral
 5 interphase 76. The data then flows through
 bus 105, into bus 41, and then on through
 bus 106 into systems controller 51. The
 data then flows through bus 107 into CPU
 40. CPU 40 then addresses RAM 64 by
 10 sending a signal over address bus 108, into
 address bus 45, and then through address
 bus 109 to RAM 64. Under program control,
 CPU 40 directs the data originating
 from optical mark-sense reader 13, through
 15 data bus 107 to systems controller 51, and
 then through data bus 106 into data bus
 41 and then to data bus 110, going to
 RAM 64. The data is then distributed to
 the 12 by 35 matrix residing within RAM
 20 64. The identity check or step shown at
 121 (Fig. 5) determines whether or not bars
 85 and 87 on the Boloteca ticket (Fig. 4)
 appear at line 7 and line 25 and each take
 up 12 fields. Under program control, CPU
 25 40 then checks at step or block 123 (Fig. 5)
 to determine if calendar clock chip 15 (Fig.
 2) is working.

If not the program branches to the display
 error stop and reset routing, illustrated
 30 by blocks 125 and 127. If the answer is
 yes, the program proceeds to step 129
 which is a decision as to whether the tape
 cassettes in. Here again if the answer is no,
 the display and reset subroutine is brought
 35 in. If yes, the next question is, is the
 cassette filled, step 130. If no, step 131
 continues with the mainline program. At step
 131 it is determined that there is bar data
 40 in line 7 and line 25 so that the game of
 Boloteca is recognized and the program
 branches to the Boloteca program 132
 contained in ROM 61.

Beginning with Fig. 6, now Boloteca step
 133 determines if six bets have been made,
 45 by checking for data in rows one through
 six of field 83 (Fig. 4). If no, the error
 message is displayed at box 134 and the
 error and stop and reset subroutine brought
 into play, including step or box 135.

The error messages are, as follows:

1. improper bets
2. less than the required number of bets
 made
3. bets made over set cash limit
4. invalid slip form
- 55 5. bets made under set cash limit
6. calendar/clock not working
7. tape cassette not in transport
8. tape full, change cassette
- 60 9. wrong tape format

In the present situation, as a result of
 error message number 2 a display is made
 at 134. If all six bets have been made the
 program proceeds to display price at step
 65 or block 135. For the Boloteca game, only

ten cruseros is displayed.

Step 136 is for the agent to press his
 push button number 5 of Fig. 3, which
 accepts the bet. Alternatively, he may press
 his reject key 6, shown by block 137, 70
 which would then reset the machine.

If the bet is acceptable, the Boloteca
 format is loaded in the RAM 65 from
 ROM 61 under control of CPU 40. At step
 138 this branches the program back to the
 main sequence of Fig. 7, shown at C by
 step 139. Calendar clock 15, is addressed
 and its data stored at step 140. Step 141
 records the betting data, clock data, serial
 no., machine no., and total amount of bet
 on tape cassette 19. At step 142, printer
 21 prints the ticket receipt. This information
 is shown in Fig. 8. The identification
 of the game is printed at 143. The playing
 period information appears at 144. The bet
 75 data appears under classification as place 1
 team 10, place 2 team 12, etc. The amount
 of the bet appears at 145, serial no. at 146,
 date and time at 147 and tape cassette file
 were the data is recorded at 149. 90

Returning to Fig. 7, the step 151 increments
 internal registers of CPU 40 by 1. Step 151
 increments at register C, the serial
 no., and step 152 increments register D for
 the file no., and step no. 153 increments
 95 the total amount of the bet at register F.
 Step 154 is the automatic stopping and
 resetting of micro-computer 11.

ESPORTIVA GAME

The pertinent portions of the Esportiva
 ticket are shown in Fig. 9 with identifica-
 tion bar 150 being placed at line 20. The
 bettor must select the outcome of 13 games
 which are being held during a one week
 period. The bettor may select either team
 105 one to win, team two to win or a tie be-
 tween the two teams as a standard bet.
 In addition, he may select double or triples
 for any particular game up to a certain
 crusero total. The rules of this game require
 that the bettor make a minimum of 12 single
 bets and one double bet for a minimum
 price of three cruseros. Additional double
 and triple bets can be made up to a maxi-
 110 mum of 162 cruseros. This game is layed
 out on a 12 by 35 matrix form.

Returning now to Fig. 5, the sequence
 of operation is shown beginning with start
 101 and traversing the same steps already
 explained until identifying bar 150 (Fig. 9)
 is sensed in the proper position to identify
 the Esportiva game at step 200 (Fig. 5).
 The program then branches to Esportiva
 program 201, in ROM 62 (Fig. 2).

This is illustrated in Fig. 10 wherein the
 first decision shown at step 203 is have 13
 bets been made. In this game if the bets
 are proper, then step 204 calculates the bet
 price for all bets for that particular ticket.
 At step 205 if it is under the limit, it dis- 130

plays a message via 206 and stops and
resets at 207. If over the limit, the same is
true via step 209, under control of decision
210. If everything is proper, the total price
is displayed at 211. Next, the agent then
receives the cash at step 212 and he presses
his accept key (Fig. 3) at step 213. Step
214 loads the Esportiva format from ROM
62 to RAM 65. The program is then
branched back at step 215 from Fig. 10
to Fig. 7, to the main program shown as
starting at 139. The main program is fol-
lowed, as before, through step 154 stop and
reset.

15 The main program of Fig. 7 includes
step 142 which is printing the ticket receipt.
The receipt for the Esportiva game is illus-
trated in Fig. 11. At 270 there is shown the
identification and ending week for the game.
20 Number 271 indicates the selections as
marked on the original ticket. Number 272
shows the amount calculated for the wager
on this particular ticket. The serial no. is
shown at 273, the game week sequential
25 identification no. is shown at 274, time and
date information at 275, and file no. at 276.

Returning now to Fig. 3, the remaining
functions of the agents keyboard 27 will
be described. The transmit key 1, causes
30 all tape cassette data to be transmitted from
cassette 19, under program control of CPU
40, to communication interface 70 (Fig. 2),
and via acoustical coupler and modem 23,
to remote telephone line 25, extending to
35 the remote computer. Step 301 reword
the tape, step 302 controls the addressing
of the communication interface, step 303
establishes handshake with the remote com-
puter, step 304 reads the data of files from
40 the cassette, and step 305 stops and resets
the micro-computer.

The grand total of bets (agents key no.
2), at step 310, addresses register F of CPU
40 to print the grand total of bets at step
311, and displays this total at step 312.

45 Key no. 3 merely controls the grand
total of the no. of bets or betting slips to
that time. When it is depressed, at step
313, register D of CPU 40 is addressed to
50 print this no. at step 314 and display the
data at step 315.

As a result of operation of agents keys
2 and 3, the information available is shown
printed out at Fig. 13. Tape cassette no.
55 is shown at 400, clock information at 401,
machine no. at 402, serial no. of the last
ticket at 403, and the final number of tickets
sold to the time of depressing the key at
404.

60 At 405, the total amount of the bets at
the time of depressing the key is shown.
The total Esportiva betting slips is shown
at 406, the total amount bet on the
Esportiva games at 407, the total number
65 of Bolotéca bets at 408, and the total Bolo-

teca money wagered at 409.

Reference is now made to Fig. 3, agents
keyboard button no. 4, Journal Printout of
Transactions. The agent may select at any
time, to have the entire printout of all files
within the tape cassette. Depressing key 4,
selects a subprogram in program ROM 60
and causes the tape cassette to rewind to
the beginning of tape status, as shown in
block 420. CPU 40, under program control,
75 stores the number 1 in register E, as shown
in block 421. File E within tape cassette
transport 19, is then loaded into RAM 65,
as shown in block 422. All data in file E
is printed on a journal tape, through printer
80 21. As shown in Fig. 12, block 424 (Fig.
3) causes file E to be incremented by 1,
thereby advancing register E to the next
number. Decision 425 checks for end of
tape status. If the tape is not at its end, 85
the program branches back to block 422,
to load the next file and the same sequence
is repeated again until the end of the tape
has been reached, whereupon the stop and
reset function, as noted in block 426, takes
90 place.

Fig. 12 shows a journal printout for five
separate transactions. Header 500 explains
the code for bets in the Esportiva game.
The number 1 denotes that team one was
95 bet, 2 shows that the x or tie was bet, 3
notes that team two was bet, 4 notes that
teams one and two were played for double,
5 denotes that teams one and a tie were
bet for a double, 6 denotes that teams two
and a tie were bet for a double, 7 denotes
that all three positions, team one, a tie
and team two were selected for a triple.

Number 501 shows one transaction print-
out. Number 502 shows the file number on
105 the tape cassette, 503 shows the serial no.
of the ticket, 504 shows the date and time
of the transaction, 505 notes the type of
bet which was made in each one of the 13
games, as noted above. 506 lists the total
amount of the bets, 507 lists the total
110 amount accumulated in the grand total
register F, and 508 lists the machine identi-
fication no.

Number 509 shows the transaction for
115 a Bolotéca bet. All information is the same
as contained in the Esportiva file with the
exception that the word Bolotéca appears
in the file and that six sets of two numbers
each are shown at 150 identifying the bets
120 made from the six games of the original
ticket.

Numbers 511, 512 and 513 show suc-
cessive printouts of transactions of the tape
cassette.

For these games, in CPU 40, the follow-
ing memory allocation is made. Register
C-serial no. of transaction, Register D-no.
of transactions and tape file no., Register
E-journal printout counter, Register F-total
130

of bets made, Register H-total no. of Esportiva bets, Register L-total no. of Boloteco bets and Register W-total amount of Esportiva.

- 5 By using the principles herein taught, other games may be programmed into CPU 40 and similarly tabulated.
The system is low power and an auxiliary re-chargable storage battery 10 power supply backs it up.

WHAT I CLAIM IS:

1. Apparatus for accepting, validating and recording betting information entered onto betting slips by bettors, wherein each 15 slip comprises information identifying any one of a plurality of games and means for allowing a bettor to enter betting information relating to that one game, the apparatus comprising a micro-computer having pro- 20 gram storage storing programs relating to each of the plurality of games, an optical reader for reading out game identifying and betting information from a betting slip, means controlled by the micro-computer for 25 transferring read out information into a memory, means for checking that the read out information is valid and for rejecting slips from which invalid information has been read, means for initiating the program 30 relating to the game identified by the read out game identifying information, a display device for displaying information related to the read out betting information, a calendar clock device for supplying time informa- 35 tion, a tape cassette transport device for recording time information and information relating to accepted bets on tape, a printer controlled by the micro-computer for print- 40 ing out tape recorded information relating to accepted bets, and a manually operable keyboard for exerting overall control of the apparatus.

2. An apparatus according to claim 1, comprising a terminal for a remote com- 45 puter and further including acoustical coupler and modem means under the control of the micro-computer for transferring tape recorded information to the remote computer.

3. An apparatus according to claim 2, wherein the display device is under the control of the micro-computer and displays read out information necessary to validation, and wherein the keyboard comprises 55 manually operable accept and reject means for accepting or rejecting each bet.

4. An apparatus according to claim 3, wherein the micro-computer comprises a central processing unit, an in-out system control means, a plurality of ROM and 60 RAM memories, interfaces for all means associated with the micro-computer, and transfer buses interconnecting all means and memories via said central processing 65 unit.

5. An apparatus according to claim 4 wherein the matrix storage capacity of at least one of said RAM's exceeds the matrix data capacity of each betting slip, said one RAM receiving and storing betting data 70 from each slip.

6. An apparatus according to claim 5 wherein the ROM memories store game formats, and means are provided for com- 75 paring game identifying indicia read from the betting slips by the optical reader with predetermined stored game format data, the central processing unit being adapted to select from the appropriate ROM the game format for the game identified by 80 comparison of the read out indicia with the stored game format data.

7. An apparatus according to claim 6 wherein said keyboard comprises a plurality of further manually operable means for 85 controlling the transmission of tape recorded information from the tape device to the remote computer, the printing of totals of bets and slips, and the printout of all the tape recorded information. 90

8. An apparatus according to claim 7 wherein at least one of said ROM's stores game format unique to Boloteco (as here- 95 inbefore defined) at least another of said ROM's stores game format unique to Esportiva (as hereinbefore defined) and at least a further of said ROM's stores game format common to said Boloteco and said Esportiva.

9. An apparatus according to claim 8 100 wherein said further of said ROM's stores indicia unique to each of said Boloteco and Esportiva games, and said central processing unit diverts from the common game format by shifting from said further ROM 105 to said one or said another ROM for the selected game format.

10. A method for accepting, validating and recording betting information entered onto betting slips by bettors, wherein each 110 slip comprises information identifying any one of a plurality of games and means for allowing a bettor to enter betting information relating to that one game, the method comprising storing programs relating to 115 each of the plurality of games in a micro-computer, reading out game identifying information and betting information from a betting slip with an optical reader, trans- 120 ferring read out information into a memory under the control of the micro-computer, checking that the read out information is valid and rejecting slips from which invalid information has been read, initiating the program relating to the game identified by 125 the read out game identifying information, displaying information related to the read out betting information, supplying time information from a clock device, recording time information relating to accepted bets 130

on a cassette tape, printing out tape recorded information related to accepted bets under the control of the micro-computer, overall control of the method being effected from a manually operable keyboard.

- 5 11. A method according to claim 10 wherein a terminal for a remote computer is acoustically coupled under control of the micro-computer to the remote computer.
- 10 12. A method according to claim 11, wherein information read out from said slips is displayed, and acceptance or rejection of each bet is determined from said displayed information.

- 15 13. A method according to claim 12, wherein a matrix storage capacity of at least one of said RAM's exceeds the matrix data capacity of each betting slip, and data read out from each slip is stored in said one RAM.

- 20 14. A method according to claim 13, wherein betting game formats are stored in 25 ROM memories, the read out game identifying information is compared with predetermined stored game format data, and the central processing unit selects from the appropriate ROM the game format for the

- 30 15. A method according to claim 14, wherein selected data is transmitted from the tape to the remote computer, and the totals of bets, slips and a journal of transactions are printed out.
16. A method according to claim 15, wherein at least one of said ROM's loads is loaded with a game format unique to Boloteca (as hereinbefore defined) at least another of said ROM's is loaded with a game format unique to Esportiva (as hereinbefore defined) and, at least a further of said ROM's is loaded with game format common to said Boloteca and said Esportiva.
17. A method according to claim 16, wherein the indicia unique to each of said Boloteca and Esportiva games is established in said further ROM, and the common game format is diverted by shifting from said further ROM to said one of said another ROM for the selected game format.
18. An apparatus for accepting, validating and recording betting information, substantially as herein described with reference to the accompanying drawings.
19. A method for accepting, validating 60 and recording betting information, substantially as herein described, with reference to and as illustrated in the accompanying drawings.

WHEATLEY & MACKENZIE,
Agents for the Applicant.

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COMPLETE SPECIFICATION

8 SHEETS

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Sheet 1

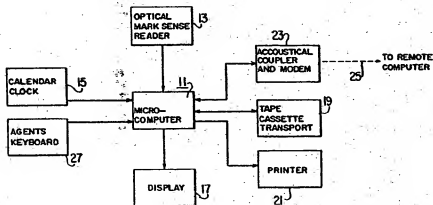


FIG. 1

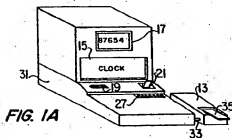
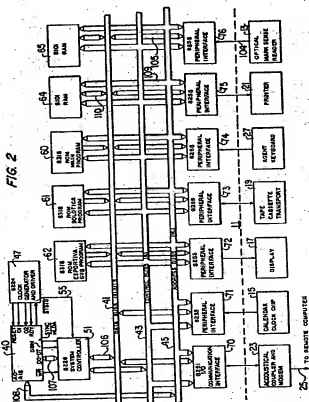


FIG. 1A

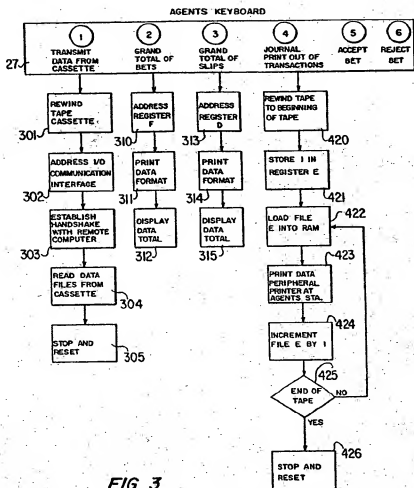


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Sheet 3



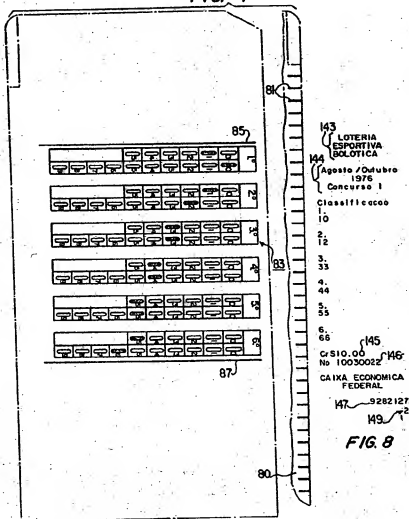
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COMPLETE SPECIFICATION

8 SHEETS

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Sheet 4

FIG. 4



143 LOTERIA
ESPORTIVA
BOLETICA
144 Agosto / Outubro
1976
Concurso 1
Classificacao

10
2. 12
3. 33
4. 44
5. 55
6. 66
145
C\$ 510.00 146
No 10030022
CAIXA ECONOMICA
FEDERAL

147 9282127
149 2

FIG. 8

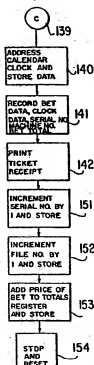


FIG. 7

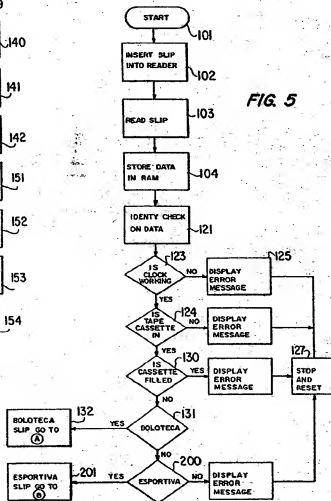


FIG. 5

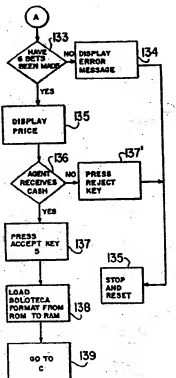
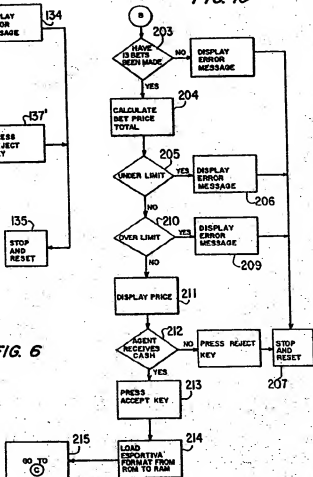


FIG. 6

FIG. 10



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8 SHEETS

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Sheet 7

FIG. 11

270 LOTERIA
ESPORTIVA
06/06/76

OR---X---2	
1	X
2	X
3	X
4	X
5	X
6	X
7	X
8	X
9	X
10	X
11	X
12	X
13	X

272 Cr \$ 3.00

273 No 10000021

Teste 269

274 CAIXA ECONOMICA
FEDERAL

275 9282127

00001 276

FIG. 9

LOTERIA ESPORTIVA									
1	X		2		D	T			
1	<input type="checkbox"/> Atletico (PR)	<input type="checkbox"/> Fluminense (PR)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
2	<input type="checkbox"/> Mangal (PR)	<input type="checkbox"/> Colorado (PR)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
3	<input type="checkbox"/> Coritiba (PR)	<input type="checkbox"/> Uniao (PR)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
4	<input type="checkbox"/> Intercontinental (SC)	<input type="checkbox"/> Avul (SC)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
5	<input type="checkbox"/> Rio Branco (ES)	<input type="checkbox"/> Carlos (ES)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
6	<input type="checkbox"/> Gols (GO)	<input type="checkbox"/> Gols (GO)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
7	<input type="checkbox"/> CEUB (DF)	<input type="checkbox"/> Brasilia (DF)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
8	<input type="checkbox"/> Vitoria (BA)	<input type="checkbox"/> Gofico (BA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
9	<input type="checkbox"/> Fluminense (BA)	<input type="checkbox"/> Bahia (BA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
10	<input type="checkbox"/> Tirolesa (CE)	<input type="checkbox"/> Ceara (CE)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
11	<input type="checkbox"/> Foz Club (AM)	<input type="checkbox"/> Nacional (AM)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
12	<input type="checkbox"/> America (PE)	<input type="checkbox"/> Santa Cruz (PE)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
13	<input type="checkbox"/> Sport Recife (PE)	<input type="checkbox"/> Nautica (PE)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			

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8 SHEETS

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Sheet 8

500 {
 ESPORTIVA
 $1 = 1; X = 2; 2 = 3$
 $1 + 2 = 4; 1 + X = 5$
 $X + 2 = 6; 1 + X + 2 = 7$

501 {
 Arquivo 1 ~ 502 503
 No 10030021 ~ 504
 Data 920217 ~ 505
 622222 222222 ~ 506
 Cr \$ 3.00 ~ 507
 TCr \$ 3.00 ~ 508
 Maquina No 00001

509 {
 Arquivo 2
 No 10030022
 Data 920217
 SOLOTTICA
 ~ 01233 445556
 Cr \$ 10.00
 TCr \$ 13.00
 Maquina No 00001

511 {
 Arquivo 3
 No 10030023
 Data 920218
 565622 222222
 Cr \$ 24.00
 TCr \$ 37.00
 Maquina No 00001

512 {
 Arquivo 4
 No 10030024
 Data 920218
 IIIIII IIII174
 Cr \$ 9.00
 TCr \$ 46.00
 Maquina No 00001

513 {
 Arquivo 5
 No 10030025
 Data 920219
 4464471 IIIIII
 Cr \$ 144.00
 TCr \$ 199.00
 Maquina No 00001

FIG. 12

400 ~ Fita No 1003
 401 ~ Data 9202133
 402 ~ Maquina No 00001
 403 ~ Recibo Final
 10030030
 404 ~ Arquivo Final No
 10
 405 ~ Cr \$ Total 372.00
 406 ~ Total Esportivo 0
 407 ~ Total \$ Esportivo 352.50
 408 ~ Total Bolateca
 409 ~ Total \$ Bolateca 2
 20.00

FIG. 13